

# Meteorological Assimilation Data Ingest System (MADIS)

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## Goal

To share observations and observation-handling technology with the greater meteorological community.

## Features

- Access to real-time and archived data sets
- Observational quality control
- Application Program Interface (API)
- User documentation and utility programs

# MADIS

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## Data Sets

- Upper Air Observations
  - Radiosonde
  - Automated Aircraft
  - NOAA Profiler Network (NPN) Wind Profiler
  - Multi-Agency Profiler
  - Radiometer
  - Satellite Winds

# MADIS

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## Data Sets - Continued

- Surface Observations
  - Meteorological Aviation Reports (METARs)
  - Maritime
  - Surface Aviation Observations (SAOs)
  - Modernized Cooperative Observer Program (COOP)
  - Mesonet

# MADIS Mesonet Providers

## 5/1/2004



### Mesonet Description

U.S. Army Aberdeen Proving Grounds  
 Citizen Weather Observers Program  
 AWS Convergence Technologies, Inc.  
 Anything Weather Network  
 Colorado Department of Transportation  
 Florida Mesonet  
 Ft. Collins Utilities  
 Goodland WFO Miscellaneous  
 Gulf of Maine Ocean Observing System  
 FSL Ground-Based GPS  
 Hydrometeorological Automated Data System  
 Iowa Department of Transportation  
 Iowa Environmental Mesonet  
 Boulder WFO Miscellaneous  
 Kansas Department of Transportation  
 Multi-Agency Profiler Surface Observations  
 Cooperative Mesonets in the Western U.S.  
 Minnesota Department of Transportation  
 National Ocean Service Physical Oceanographic Real-Time System  
 National Weather Service Cooperative Observer Program  
 Oklahoma Mesonet  
 Remote Automated Weather Stations  
 Radiometer  
 Denver Urban Drainage & Flood Control Dist.  
 Weather for You

### Provider Name

### No. of Sites

### Coverage

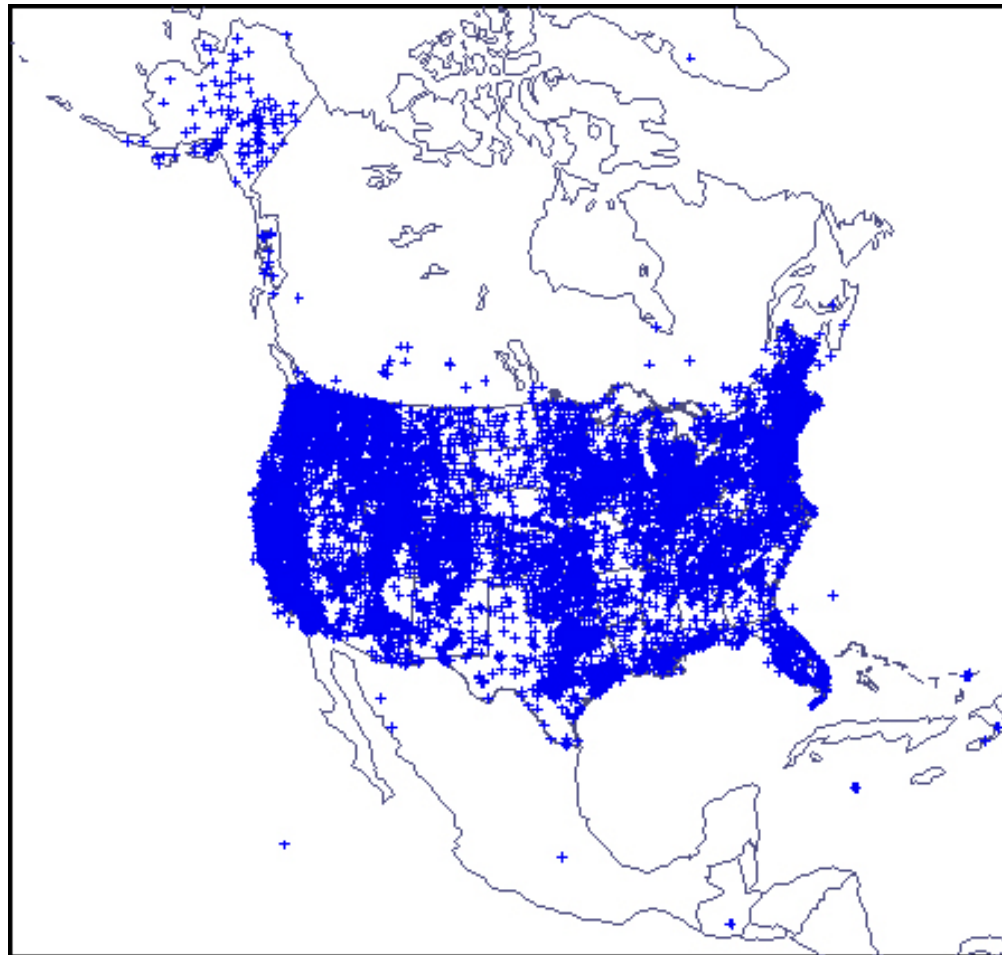
APG	5	Maryland
APRSWXNET	2195	Global
AWS	5600	U.S.
AWX	64	CONUS
CODOT	107	Colorado
FL - Meso	39	Florida
FTCOLLINS	5	Colorado
GLDNWS	15	CO/KS/NE
GoMOOS	10	Gulf of Maine
GPSMET	340	U.S.
HADS	60	New England
IADOT	50	Iowa
IEM	88	Iowa
INTERNET	13	Colorado
KSDOT	41	Kansas
MAP	12	CONUS
MesoWest	2552	West CONUS
MNDOT	92	Minnesota
NOS – PORTS	34	CONUS
NWS – COOP	100	New England
OK - Meso	116	Oklahoma
RAWS	1777	U.S.
RDMTR	2	U.S.
UDFCD	17	Colorado
WXforYou	414	U.S.

**Total = 13,748**

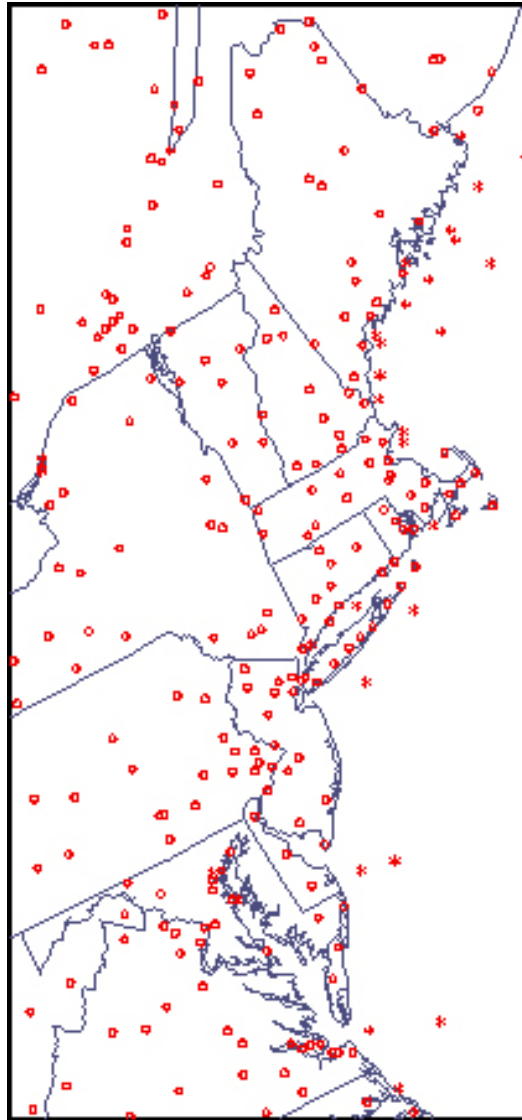


FORECAST  
 SYSTEMS  
 LABORATORY  
 BOULDER, COLORADO

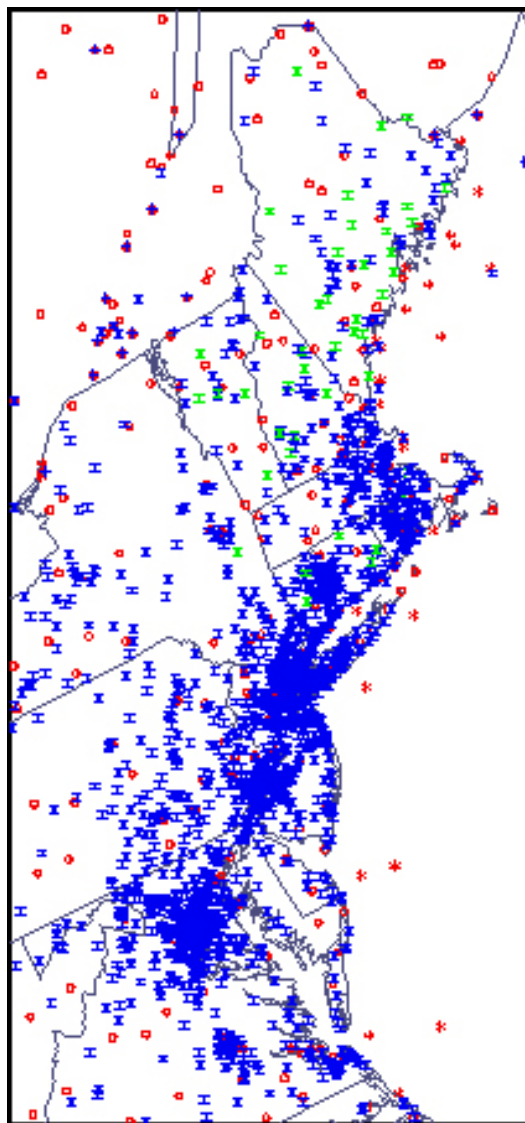
# Mesonet Sites 5/1/2004



## 4/29/04 – 12Z – NE Atl. Coast (METAR/Maritime)



4/29/04 – 12Z – NE Atl. Coast (All Surface)



May 2004

MADIS

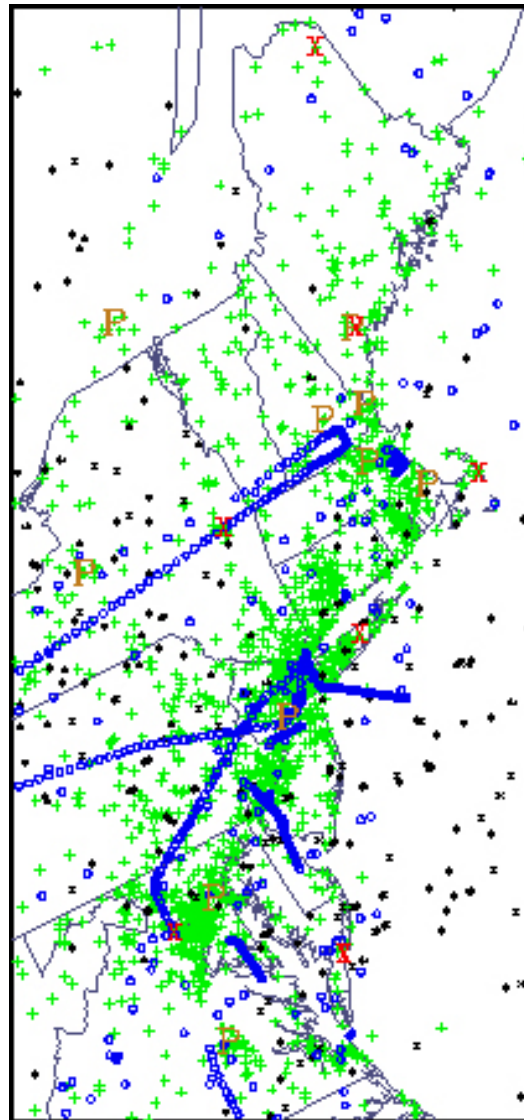
7



FORECAST  
SYSTEMS  
LABORATORY  
BOULDER, COLORADO



## 2/3/04 – 00Z – NE Atl. Coast (Total)





# MADIS Output Data Files

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- Include Observations and Quality Control Flags
- Real-Time Distribution
  - ftp, LDM, OPeNDAP
- On-Line Archive (saved real-time data files)
  - From July 1, 2001

# MADIS Distribution

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Provides easy distribution of observation and QC information to:

- NWS forecast offices and modeling centers
- Universities and research organizations
- Private companies
- Others

Distribution Categories:

- Distribution to NWS
- Distribution to government, research, and education organizations
- Full distribution

# MADIS Software Support

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- Application Program Interface (API) to read the observation and QC information
- User documentation and utility programs

# MADIS

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## API Advantages

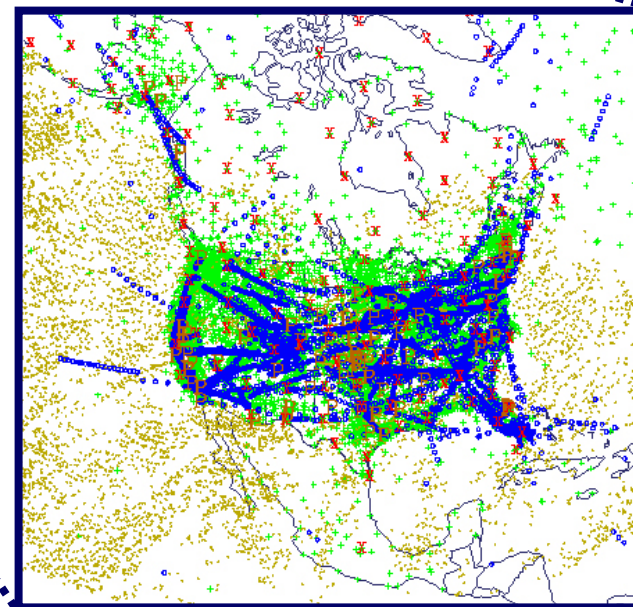
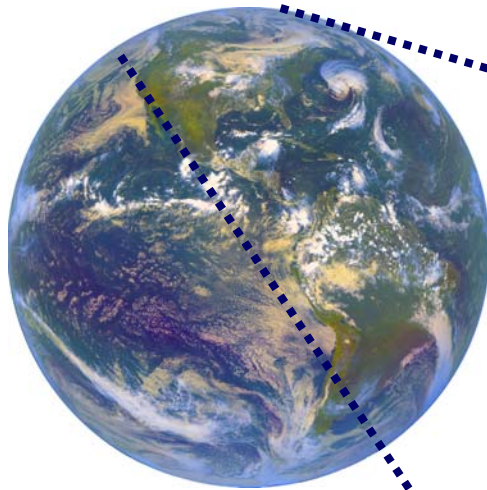
- Invisible data formats and file structures
- Multiple retrieval of similar observations
- Variable transformation
- Time windowing
- Domain specification
- Sounding generation
- QC information
- Utility routines
- Portability

# MADIS



Future

- More Data!



# MADIS URLs

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- Home Page  
[www-sdd.fsl.noaa.gov/MADIS](http://www-sdd.fsl.noaa.gov/MADIS)
- Real-Time Surface Observation Display  
[www-frd.fsl.noaa.gov/mesonet/](http://www-frd.fsl.noaa.gov/mesonet/)
- Real-Time Profiler Display  
[www.profiler.noaa.gov/jsp/profiler.jsp](http://www.profiler.noaa.gov/jsp/profiler.jsp)
- Real-Time Aircraft Display  
[acweb.fsl.noaa.gov](http://acweb.fsl.noaa.gov)
- Real-Time Upper Air Soundings  
[www-frd.fsl.noaa.gov/soundings/java](http://www-frd.fsl.noaa.gov/soundings/java)

# Surface Observation Web Page

